

KACHALOV, N.

Important source for increasing the efficiency of capital investments. Vop.ekon. no.1:48-56 Ja '59. (MIRA 12:1)
(Capital investments)

PODSHIVALENKO, P.D.; BALIKHIN, M.I.; BASHINSKIY, S.V.; IVANOV, N.A.;
KACHALOV, N.N.; NEMKOV, G.P.; ONUPRIYEV, I.A.; PERESLEGIN, V.I.;
RUMYANTSEV, A.F.; RUSAKOV, A.N.; SEMENOV, I.Ya.; STOMAKHIN, I.B.;
FILIPPOV, V.F. Prinimal uchastiye VINOGRADOV, K.K. PODGORNAYA, V.,
red.; TROYANOVSKAYA, M., tekhn.red.

[Construction economics; textbook] Ekonomika stroitel'stva; uchebnoe
posobie. Moskva, Gos.izd-vo polit.lit-ry, 1960. 534 p.

(MIRA 14:1)

1. Kommunisticheskaya partiya Sovetskogo Soyusa. Vysshaya partiynaya shkola. 2. Chlen kollegii Tsentral'nogo statisticheskogo upravleniya SSSR (for Vinogradov).

(Construction industry)

PODSHIVALENKO, P.D.; BALIKHIN, M.I.; BASHINSKIY, S.V.[deceased]; IVANOV, N.A.; KACHALOV, N.N.; NEMKOV, G.P.; ONUFRIYEV, I.S.; PERESLEGIN, V.I.; RUMYANTSEV, A.F.; RUSAKOV, A.N.; SEMENOV, I.Ya.; STOMAKHIN, I.B.; FILIPPOV, V.F.; PODGORNOVA, V., red.; TROYANOVSKAYA, N., tekhn. red.

[Economics of construction]Ekonomika stroitel'stva; uchebnik. Moskva, Gospolitizdat, 1962. 542 p. (MIRA 15:11)

1. Kommunisticheskaya partiya Sovetskogo Soyuza. Vysshaya partiynaya shkola.

(Construction industry)

KACHALOV, O.B.

Formula for calculating gas flow to a well after it has been
shut down. Gas. prom. 7 no.9:13-14 '62. (MIRA 17:8)

KACHALOV, O.B.

Stressed state of a rock sample in the case of a plane-radial
gas flow. Izv. AN Uz. SSR. Ser. tekhn. nauk 9 no.3:87-91 '65.

(MIRA 18:8)

1. Tashkentskiy politekhnicheskii institut.

KACHALOV, O.B.

Temperature distribution along a gas well bore. Gaz. prom. 7
no.4:11-12 '62 (MIRA 17:7)

L 21219-66 EWT(m)/EWP(w)/T/EWP(t) IJP(c) JD/JG
ACC NR: AP6003809 SOURCE CODE: UR/0181/66/008/001/0265/0267

AUTHORS: Kizhbayev, S. A.; Bokov, V. A.; Kachalov, O. V.

ORG: Institute of Semiconductors AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Magnetic properties of $YMnO_3$

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 265-267

TOPIC TAGS: yttrium^{1.57} compound, ferromagnetism, magnetic susceptibility, single crystal, magnetic moment, temperature dependence, neutron diffraction, antiferromagnetism

ABSTRACT: In view of the lack of convincing data allowing to conclude the existence of weak ferromagnetism and in $YMnO_3$, the authors measured its magnetic properties using single-crystal samples, at low temperatures. The magnetic susceptibility was measured with a magnetic balance by the Faraday method in the temperature interval from 4.2 to 300K at a maximum field of 13.6 kOe. The apparatus employed was described in detail by N. M. Kreynes (Dissertation, IFP,

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L 21219-66

ACC NR: AP6003809

M., 1959). The synthesis of the single crystals was described by the authors earlier (FTT v. 5, 3607, 1963). The specific susceptibility decreased slowly with increasing temperature, and no spontaneous magnetic moment was observed at low temperatures. Nor were anomalies observed, characteristic of antiferromagnetic phase transitions, on the temperature dependence of the reciprocal magnetic susceptibility. Neutron diffraction has disclosed, however, the presence of antiferromagnetic ordering at 4.2K. Judging from the values of the lattice parameter, the temperature of the antiferromagnetic ordering should lie in the liquid-nitrogen range. It is concluded on the basis of the data that YMnO_3 is not a weak

ferromagnet, but a compensated antiferromagnet. The authors thank G. A. Smolenskiy for interest, A. S. Borovik-Romanov for the opportunity of performing the magnetic measurements at low temperature, I. Ye. Mylnikova for supplying the single crystals, and N. M. Kreynes for reviewing the manuscript and valuable remarks. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 30Jul65/ ORIG REF: 004/ OTH REF: 007

Card 2/2 *aka*

KACHALOV, P.P., starshiy nauchnyy sotrudnik; PETROV, Ya.P., kand.tekhn.
nauk, otv.red.; KUZNETSOV, V.V., tekhn.red.

[Investigating the effect of basic factors on lubrication conditions and the wear of the piston group of heat engines used in lumbering] Issledovanie vlianiia osnovnykh faktorov na rezhim smazki i iznashivaniie porshnevoi gruppy teplovykh dvigatelei, primenyaemykh v lesnoi promyshlennosti. Leningrad, 1959. 75 p.
(MIRA 14:4)

1. Leningrad, TSentral'nyy nauchno-issledovatel'skiy institut lesosplava.
 2. TSentral'nyy nauchno-issledovatel'skiy institut lesosplava (for Kachalov).
- (Lumbering--Machinery) (Gas and oil engines--Testing)

KACHALOV, P. P.

Cand Tech Sci - (diss) "Study of the effect of basic factors on the lubrication condition, and the wear of the piston group in heat engines used in the Lumber industry." Leningrad, 1961. 25 pp with diagrams; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Order of Lenin Forestry Engineering Academy imeni S. M. Kirov); 150 copies; free; (KL, 7-61 sup, 238)

1. KACHALOV, S.
2. USSR (600)
4. Building
7. Organization of labor in the brigade., Sel'.stroi., 7, No.5, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

KACHALOV, S.

Analysis of the fulfillment of estimates of institutions financed
by the budget. Bukh. uch. 15 no. 4:22-27 Ap '58. (MIRA 11:5)
(Hospitals--Accounting)

KACHALOV, S.; BRONIN, N., inzh.

Revise ship-hour norms. Rech. transp. 21 no.12:12-14
D '62. (MIRA 15:12)

1. Zamestitel' nachal'nika Yeniseyskogo parokhodstva
(for Kachalov).
(Cargo handling—Production standards)
(Wages—Inland water transportation)

KACHALOV, S.A.; KOVSH, G.I.

Firing glass furnaces with natural gas. Stek. i ker. 18 no.6:
3-6 Je '61. (MIRA 14:7)
(Glass furnaces) (Gas, Natural)

KACHALOV, S. F.

(Simple bookkeeping methods in public health institutions) Moskva,
Akademiia med. nauk SSSR, 1950. 133 p.

KACHALOV, S.F.

[Coordinated estimates of public health expenditures] Svod-
noe planirovanie rashodov na zdavookhranenie. Moskva,
Medgiz, 1955. 31 p. (MIRA 8:6)
(Public health--Appropriations and expenditures)

KACHALOV, SERGEY FEDOROVICH

N/5
771
.KI

Byudshetnaya sistema SSSR (Budget system of the USSR) Moskva, Medgiz, 1955.
37 p. tables (Moscow. Tsentral'nyy institut Usovershenstvovaniya Vrachey.
Lektsii po organizatsii zdavookhrane niya dlya vrachey, no. 1)
At head of title: Finansirovaniya zdavookhraneniya i uchet v meditsinskikh
uchreshdeniyakh.
Bibliographical footnotes.

KACHALOV, Sergey Fedorovich; ZHUKOV, G.I., redaktor; CHIRNIKOV, A.P.,
redaktor; ROMANOVA, Z.A., tekhnicheskii redaktor

[Compiling estimates of expenditures in medical institutions] So-
stavlenie smety raskhodov meditsinskikh uchrezhdenii. Moskva, Gos.
izd-vo meditsinskoi lit-ry, 1955. 49 p. (MLRA 8:7)
(Public health--Finance)

GOROKHOVER, Isaak Abramovich; KACHALOV, ^{F.} ~~Isaak Abramovich~~ otvetstvennyy redaktor;
SHPITAL'SKAYA, M., redaktor izdatel'stva; LEBEDEV, A., tekhnicheskiiy redaktor

[Journal-voucher forms of accounting for budget institutions]
Zhurnal'no-ordernaia forma ucheta v biudzhetykh uchrezhdeniyakh.
Moskva, Gosfinizdat, 1956. 93 p. (MLRA 10:3)
(Accounting)

KACHALOV, S.F.

Analysis of the budgetary estimate of a medical establishment. Sov.
zdav. 15 no.6:41-45 M-D '56. (MLRA 10:1)

1. Glavnyy bukhgalter Ministerstva zdavookhraneniya SSSR
(HOSPITALS
in Russia, budgetary estimations)

Kachalov, S.F.

ORKHOV, V.S.; KACHALOV, S.F., red.

[Accounting in medical institutions] Bukhgalterskii uchet v meditsinskikh uchreshdeniakh. Moskva, M-vo zdavookhraneniia SSSR.
No.1. 1957. 47 p. (MIRA 11:6)
(Hospitals--Accounting)

AUTHORS:

Ol'shanskiy, N.A., Mordvintseva, A.V., Zorin, Yu.N., and Kachalov, V.M.

SOV/125-58-11-4/16

TITLE:

Chambers with Controlled Atmosphere for Welding Active Metals
(Kamery s kontroliruyemoy atmosferoy dlya svarki aktivnykh metallov)

PERIODICAL:

Avtomaticheskaya svarka, 1958, Nr 11; pp 32-36 (USSR)

ABSTRACT:

The MVTU and MEI welding laboratories, under the supervision of Professor G.A. Nikolayev, designed hermetic chambers filled with inert gas for the fully mechanized welding of zirconium, molybdenum, titanium, etc. The use of automatic welding heads inside the chambers ensures a most accurate control of the arc voltage, and the welding process is controlled from a special desk. The following devices are described in detail: 1) an installation for welding in controlled atmosphere consisting of a chamber, a prevacuum pump, a control desk and a vacuummeter (Fig. 1) for welding specimens up to 300 mm length; 2) an installation for the welding, in controlled atmosphere, of large-size specimens with the use of a movable welding head and a vacuum line with a pump system. Contrary to foreign

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SOV/125-58-11-4/16

Chambers with Controlled Atmosphere for Welding Active Metals

models, the electric motors are placed inside the chamber, thus simplifying the welding process and permitting the design of large-size chambers. Zirconium and molybdenum specimens were successfully welded in the described installations. There are 3 photos and 1 circuit diagram.

ASSOCIATION: MVTU imeni Bauman i MEI (MVTU imeni Bauman and MEI)

Card 2/2

OL'SHANSKIY, N.A., kand.tekhn.nauk, dotsent; MOROVINTSEVA, A.V., kand.
tekhn.nauk; Primali uchastiye: ZORIN, Yu.N., inzh.; KACHALOV, V.M.,
inzh.

Fusion welding of commercial-grade molybdenum. [Trudy] MVTU
no.101:29-48 '61. (MIRA 14:8)
(Molybdenum--Welding)

OL'SHANSKIY, N.A.; KACHALOV, V.M.

Causes of weld reinforcement formation in electron beam
welding. Avtom. svar. 18 no.8:73 Ag '65. (MIRA 18:11)

L 21940-66 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k) LJP(c) ID/HM
 ACC NR: AP6014462 SOURCE CODE: UR/0125/65/000/008/0073/0073

AUTHOR: Ol'shanskiy, N. A.; Kachalov, V. M.

ORG: none

TITLE: Causes of weld-seam strengthening in electron-beam welding

SOURCE: Avtomaticheskaya svarka, no. 8, 1965, 73

TOPIC TAGS: electron beam welding, butt welding, material deformation, welding technology

ABSTRACT: In electron-beam welding of butt joints with no added metal there are some conditions under which joints are formed with appreciable strengthening. The reasons why the strengthening occurs have been unclear. Different assumptions have been made where some assume that the strengthening occurs as a result of driving metal out of the welding crater, while others assume that there is an increase in volume of the metal in welding as a result of decrease in density. However, it is easily shown that the metal driven out of the crater is insufficient to form a reinforcement, while the assumption that there is an increase in the volume of metal is not confirmed by experiments.

We assumed that reinforcement is formed by angular deformation of the sheets, which occurs during the welding process.

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UDC: 621.791.85.053

L 21940-66

ACC NR: AP6014462

Punch marks (10 mm) were made along the central part of a 120 x 240 x 9 mm plate of 1Kh18N9T stainless steel. The distance between the punch marks was measured exactly, and then the base metal between the punch marks was melted by an electron beam at the following conditions: $U = 50 \text{ kV}$, $I = 25 \text{ Ma}$, $V = 25 \text{ M/hr}$.

Measurements made after welding showed that on the upper side of the plate there is a considerable reduction in the distance between the base punch marks, while on the lower side it increased only slightly. It was noted that the plate was deformed, and that the area of the metal between the punch mark decreased by approximately $1.2\text{--}1.3 \text{ mm}^2$ as a result of deformation.

To determine the area of reinforcement of the joint, macroslices were made from the plate. Measurements showed that the area of reinforcement is also approximately equal to $1.2\text{--}1.3 \text{ mm}^2$. Thus, quite complete agreement was found between the reduction in area between the punch marks resulting from angular deformation, and the area of the reinforcement produced in the joint. These experiments support the assumption previously made that reinforcement of the joint occurs as a result of angular deformation of the plate during the welding process. It has been found that deformation of the base metal during the welding process favors pressing liquid metal out on to the surface of the plate so as to form a reinforcement for the joint. The editors suggest that a reinforcement may also be formed in the absence of angular deformations,--as a result of transverse shrinkage. Orig. art. has: 1 figure and 1 table. JPRS

SUB CODE: 13 / SUEN DATE: none

Card. 2/2 *148*

AUTHORS: ~~Kachalev, V.P.~~, Pavlenko, N.A. and Yakovleva, A.V. SOV/49-58-9-4/14

TITLE: The Ultra-violet Spectrum of the Sun in the Region
2471 - 2635 Å (Ultravioletovyy spektr solntsa v
oblasti 2471-2635 Å)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,
1958, Nr 9, pp 1099 - 1104 (USSR)

ABSTRACT: 14 spectrograms were obtained at heights up to 100 km. Lists of lines in the region 2471 - 2635 Å have previously only been published for low dispersion spectrograms (40 Å/mm) (Refs 1-3). Ref 4 gives a list of lines with wavelengths longer than 2635 Å for a dispersion, in the second order, of 20 Å/mm. These agree well with the authors'.
The spectrograph had a concave diffraction (600 lines/mm). The dispersion was 16.7 Å/mm and the slit width 0.02 mm. A moveable hand was included in the spectrograph to compensate for the precession of the rocket and thus obtain constant slit illumination. The exposures were for two secs. and the dial of a stopwatch was photographed simultaneously to correlate the exposure time with height. Three particularly good spectrograms were chosen from the fourteen taken and they were measured on a comparator, IZA-2,

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The Ultra-violet Spectrum of the Sun in the Region 2471-2635 Å SOV/49-58-9-4/14

with a magnification of 40. In order to increase resolution by averaging over the photographic grains seen on the plate, a special apparatus was constructed which vibrated the objective at a 50-cycle frequency. The resolution obtained was ~ 0.2 Å. The least blended lines:

2488.143	2591.542
2510.834	(2605.656
2545.977	(2605.697

were used to construct a dispersion equation for the region. The correction required to the equation was up to 0.03 Å. The correction required in the comparison of the measured lines with water vapour lines in the atmosphere was of the same magnitude but opposite sign. Average error in measuring was 0.06 Å.

A microphotometer (MF-4) was used with an Sb-Cs cell. A full photometric survey has not yet been made and the list gives visual intensities on a scale of 10.

Owing to the dispersion used, most of the absorption lines were blended. The method of measurement was as follows.

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The Ultra-violet Spectrum of the Sun in the Region 2471-2635 Å SOV/49-58-9-4/14

For each wavelength, lines were chosen from tables (Refs 5 and 6) of elements widely distributed on the sun, which agreed within the measurement error. The majority of lines could have arisen from a variety of ions. Many could be excluded by straightforward comparison (e.g. by considering number and intensity of multiplets). When the superimposed lines had an intensity ratio of 30% or greater, both lines were included in the table in brackets. The measured wavelength is placed opposite the basic contributor to the line.

Elements which are uncommon on the sun, e.g. boron, mercury and phosphorus coincided generally in line position with more common elements, but BeI was observed. The authors append a list of the lines with the following notation:

- | | | |
|---------------|---|--|
| r | - | sharp bands. |
| d | - | diffused bands. |
| sh | - | wide bands. |
| fik [f and k] | - | bands with distorted contours toward the violet and red ends respectively. |

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The Ultra-violet Spectrum of the Sun in the Region 2471-2635 Å ^{SOV/49-58-9-4/14}

Insufficiently resolved lines are in round brackets and multiplet numbers from C.E. Moore's tables are given in round brackets after the element. There are 1 figure, 1 table and 6 references, 1 of which is Soviet and 5 English.

ASSOCIATION: Gosudarstvennyy opticheskiy institut
(State Optical Institute)

SUBMITTED: October 3, 1957

Card 4/4

SOV/49-59-8-10/27

AUTHORS: Kachalov, V. P., Pavlenko, N. A. and Yakovleva, A.V.

TITLE: The Ultraviolet Solar Spectrum¹ in the Region of
2636-2937 Å ✓

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
1959, Nr 8, pp 1177-1185 (USSR)

ABSTRACT: The data were calculated by means of photographs obtained
with a spectrograph having a concave diffracting mesh.
The results are presented in a table where the following
data are included:

Column 1 - wavelength,

Column 2 - intensity and character of line,

Column 3 - probable identification.

There are 1 table and 4 references, 2 of which are Soviet
and 2 English.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optical
Institute) ✓

SUBMITTED: October 14, 1958
Card 1/1

3.1250

40454

S/035/62/000/009/017/060
A001/A101

AUTHORS: Kachalov, V.P., Yakovleva, A. V.

TITLE: Ultraviolet spectrum of the Sun in the band 2470 - 3100 Å.

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 9, 1962, 53, abstract 9A383 ("Izv. Krymsk. astrofiz. observ.", 1962, v. 27, 5 - 43)

TEXT: The records of the solar spectrum are presented on the basis of spectrograms taken at an altitude of ~100 km with resolution of 0.15 Å for the band $\lambda\lambda 2700 - 3100$ and 0.3 Å for the band $\lambda\lambda 2470 - 2700$. The distribution of absolute energy was found by comparing with the emission of a carbon arc crater. The equivalent width of absorption by resonance lines of ionized magnesium has been determined, which is equal to 66 Å at $\lambda 2800$. The list of the measured Fraunhofer lines is presented with their identification and visual estimation of intensity for the band $\lambda\lambda 2632 - 2900$. There are 12 references.

From author's summary

[Abstracter's note: Complete translation]
Card 1/1

41276

S/035/62/000/010/024/128
A001/A101

AUTHORS: Kachalov, V. P., Khokhlov M. Z., Khokhlova, V. L.,
Yakovleva, A. V.

TITLE: Ultraviolet lines of Be I in the Sun's spectrum

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10, 1962, 45,
abstract 10A329 ("Izv. Krymsk. astrofiz. observ.", 1962, v. 27,
44 - 51)

TEXT: Equivalent widths of lines of Be I λ 2651 and λ 2494 were obtained from rocket spectrograms. The authors discuss the problem of oscillator strength for three beryllium multiplets, λ 3321, 2651 and 2494, which have a common lower level $2s2p^3P$. Relative values of $\sum gf$ for these multiplets are experimentally determined. A comparison with the theoretical ones, calculated by means of Bathe-Damhaard's tables, indicates the inaccuracy of the latter. It is most probable that a more precise determination of f absolute value must lead to a reduction of beryllium abundance on the Sun, determined by Greenstein and Tandberg-Hanssen (RZhAstr, 1955, no. 3, 1073), Goldberg, Muller and Aller (RZhAstr, 1961, 11A411).

Card 1/2

Ultraviolet lines of Be I in the Sun's spectrum

S/035/62/000/010/024/128
A001/A101

The relative variation of the observed equivalent widths of Be I lines in the solar spectrum indicates a decrease of continuous absorption coefficient from $\lambda 3321$ towards shorter wavelengths. There are 14 references.

Authors' summary

[Abstracter's note: Complete translation]

Card 2/2

5/033/02/039/006/005/024
E032/E514

AUTHOR: Kachalov, V.P.

TITLE: Sensitive BiI lines in the solar spectrum

PERIODICAL: Astronomicheskii zhurnal, v.39, no.6, 977-980

TEXT: A survey of published information on lines in the ultraviolet of the solar spectrum is reported. The results are compared with the known strongest BiI lines. It is concluded that the most suitable line for estimating the abundance of Bi in the solar photosphere is the line λ 3067.69 Å. Detailed calculations for this line indicate that the number N of Bi ions per gram of solar matter is given by $\log N = 12.8$ and the ratio of the number of Bi atoms to the number of hydrogen atoms is given by $\log N/N_H = -10.8$. It is noted that the result for cosmic space is $\log N = -11.1$. There are 2 tables and 1 figure. ✓

ASSOCIATION: Opticheskii institut imeni S. I. Vavilova
(Optical Institute imeni S. I. Vavilov)

SUBMITTED: September 14, 1961

Card 1/1

45121

S/712/62/027/000/001/015
A001/A101

3.15/0

AUTHORS: Kachalov, V. P., Yakovleva, A. V.

TITLE: The ultraviolet solar spectrum in the region 2470-3100 Å

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya observatoriya. Izvestiya. v. 27, 1962, 5 - 43

TEXT: In 1959 five spectrograms of the Sun were taken at heights of about 100 km with a spectrograph of normal incidence of rays, the resolution being 0.15 Å at 2700 - 3100 Å and 0.3 Å at 2470 - 2700 Å. The calibration of films was made under laboratory conditions on an ИСП-28 (ISP-28) spectrograph. A carbon arc was used as a standard source of light. A spectrogram with best resolution was selected for plotting the curve of relative energies in the solar spectrum. Microphotograms were obtained on a recording microphotometer МФ-4 (MF-4). A specially designed device was used to transform the curves obtained into intensity curves. The distribution of absolute energy was found by comparison with a carbon arc crater radiation at λ 2930 Å where both spectra were of the same density. At this wavelength the energy of the Sun above the Earth's

Card 1/2

3.5120

44833.

S/560/62/000/014/004/011
A001/A101

AUTHORS:

Yakovleva, A. V., Kudryavtseva, L. A., Britayev, A. S., Gerasov, V. P., Kachalov, V. P., Kuznetsov, A. P., Pavlenko, N. A., Iozenas, V. A.

TITLE:

A spectrometric investigation of the ozone layer up to 60-km altitude

SOURCE:

Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. no. 14, 1962, 57 - 68

TEXT:

The vertical distribution of ozone can be determined from the scattered ultraviolet radiation of the Sun, using reversal effect discovered by G8tz, or by direct measurements from the ground surface and from balloons or rockets. In order to compare these indirect and direct methods, simultaneous measurements of altitude ozone distribution with a spectrograph lifted by a rocket and with a ground spectral equipment for observations of ultraviolet light scattered from the sky zenith, were carried out in the USSR on June 15, 1960. A photoelectric spectrophotometer with double light decomposition in

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A spectrometric investigation of the...

S/560/62/000/014/004/011
A001/A101

quartz prisms was used for observations from the ground surface. The amount of ozone in various atmospheric layers, total amount and the altitude of the gravity center of the ozone layer from these observations are shown in Table 1. The first ascent of a rocket for ozone measurements took place on July 19, 1955. It turned out that all ozone was concentrated in two layers: 13 - 26 km and 50 - 64 km, between which no ozone was detected. The second rise was on October 1, 1958, at a Sun's declination of 19° . The third attempt was made on June 15, 1960. A diffraction spectrograph provided with a tracking device was lifted on a geophysical rocket. The results of Soviet measurements are compared with American ones and presented graphically in Figure 5. Comparison between direct determinations and measurements from rockets is shown in Figure 6; the agreement between them was found to be satisfactory, but the final answer on their equivalence can be obtained only after further investigations with rockets. There are 6 figures and 3 tables.

SUBMITTED: December 12, 1961

Card 2/2

45122

S/712/62/027/000/002/015
A001/A101

3.1540
AUTHORS: Kachalov, V. P., Khokhlov, M. Z., Khokhlova, V. L., Yakovleva, A.V.

TITLE: Ultraviolet Be I-lines in the solar spectrum

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya observatoriya. Izvestiya. v. 27, 1962, 44 - 51

TEXT: The problem of beryllium abundance is of importance in connection with the problem of origin of elements and intermixing of substance in stellar interiors. Two multiplets of Be I, λ 2651 and λ 2494 were identified in the solar ultraviolet spectrum obtained by rockets at heights of about 100 km. These multiplets, as well as multiplet λ 3321, have a common lower level $2s2p^3P_{0,1,2}$ with excitation potential 2.71 ev. The problem of oscillator strengths of these multiplets is considered. The relative values of $\sum gf_{exp}$ for these multiplets are determined from absorption spectra in a King furnace by comparing equivalent widths of these lines in the region of rectilinear portion of the curve of growth. Absorption spectra were obtained for various temperatures from 2,300 to 3,000°K and the pressure in the King furnace of the order of

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Ultraviolet Be I lines in the solar spectrum

S/712/62/027/000/002/015
A001/A101

100 mm Hg. The comparison of experimental $\sum gf$ with theoretical ones shows a considerable difference. Calculations by the Bates-Damgaard tables for Ca I leads also to results diverging from experimental values. Therefore the use of these tables for calculating absolute f of the Be I multiplets considered is not justified. The introduction of a corresponding correction will lead to reduction of beryllium abundance in the solar atmosphere and to increasing difference between its abundance there and in the Earth and meteorites. Analyzing the relative variation of the observed equivalent widths of Be I lines in the solar spectrum, the authors conclude that the coefficient of continuous absorption decreases from $\lambda 3321$ towards shorter wavelengths. However this problem calls for a further study from both experimental and theoretical viewpoints. There are 4 figures and 3 tables. X

SUBMITTED: May 1961

Card 2/2

YAKOVLEVA, A.V.; KUDRYAVTSEVA, L.A.; BRITAYEV, A.S.; GERASEV, V.F.;
KACHALOV, V.P.; KUZNETSOV, A.P.; PAVLENKO, N.A.; IOZENAS, V.A.

Spectrometric investigation of the ozone layer up to the
altitude of 60 km. Isk.sput.Zem. no.14:57-68 '62.
(MIRA 15:11)

(Ozone)

(Atmosphere, Upper—Rocket observations)

KACHALOV, V.P.

Sensitive Bi I lines in the solar spectrum. Astron.zhur.
39 no.6:977-980 N-D '62. (MIRA 15:11)

1. Opticheskiy institut im. S.I. Vavilova.
(Spectrum, Solar)

YAKORSON, G.P.; KACHALOV, Yu.M.

Method for calculating the reduced pressures of formation waters
in water drive systems. Geol. nefti i gaza 9 no.6:49-58 Ja '65.
(MIRA 18:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy
neftyanoy institut, Moskva.

KACHALOVA, L.P.

USSR

✓ 2636. Constructional features of a tunnel kiln.—M. E. BRAVERMAN and L. P. KACHALOVA (*Glas & Ceramics*, Moscow, 12, No. 5, 28, 1955). Details are given of a Russian pre-war "utility" tunnel kiln. Its dimensions were: internal width, 7.2 ft.; height from car bottom to key of arch, 3.7 ft.; total length, 360 ft. (entrance chamber, 15.7 ft.; preheating-zone, c. 160 ft.; firing-zone, 31.5 ft.; cooling-zone c. 87 ft.; exit chamber, 6.2 ft.). The capacity of the kiln is 60 cars each 4.9 ft. long. The kiln is fired on cold producer gas and is operated at 1,300° C. (3 figs.)

KACHALOVA, L.P., Cand tech Sci -- (diss) "Study of certain materials of ~~heightened thermostability based on~~ ^{increased heat resistance on the basis of} zirconium dioxide." Len, 1958, 15 pp with illustrations (Min of Higher Education USSR. Len Order of Labor Red Banner Tech Inst im Lensovet) 130 copies (KL, ~~328x~~ 32-58, 108)

5(2)

AUTHORS:

Kachalova, L. P., Avgustinik, A. I.

SOV/153-58-5-12/28

TITLE:

Investigation of Kermet Based on ZrO_2 -Cr (Issledovaniye kermeta na osnove ZrO_2 -Cr)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 70-75 (USSR)

ABSTRACT:

As, according to the opinion of some scientists, there exists the possibility of stabilizing ZrO_2 by means of titanium (Ref 1) it was interesting to check if metallic chromium can be used for this purpose. A kermet produced in this way could combine the properties of a highly refractory oxide with the high thermal conductivity of the metal component. The vibration-ground components mentioned in the title were carefully mixed at a ratio of ZrO_2 : Cr = 90 : 10 to 30 : 70 (Table 1). Bars were pressed from it (pressure 1000 kg/cm^2). These bars were burned in electro-vacuum furnaces TVV-2 at a temperature increase of $500^\circ/\text{hour}$ up till 1750° , and then were cooled for 10 minutes. To explain the usability of the said kermet for the production of the terminals of thermocouples for the

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Investigation of Kermet Based on ZrO_2 -Cr

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temperature measuring of molten metals the bars were immersed into molten steel at 1650° as well as brass at 1070° for 0.5 minutes, and then were quenched in air or cold water. The properties of the samples in dependence upon the composition are given by table 2. The experimental results make possible the following conclusions: 1) Kermet of high mechanical strength can be produced from ZrO_2 in a mixture with chromium powder (20% and more). The reason is to be found in the fact that the metal component compensates the change in volume formed in polymorphous transformations of monoclinic ZrO_2 at high temperatures. This causes a stabilization-like effect. 2) A previous partial oxidation of chromium in the samples as well as an addition of 3% Cr_2O_3 promoted the strength in the samples with 10% chromium; the mechanical strength, however, not the thermal stability, is increased (Table 3). 3) A microscopic (Figs 1-3) and radiographic analysis (Table 5) proved in kermet no other formations than the two phases of monoclinic ZrO_2 and metallic chromium. 4) The individual kermet compositions (Table 1) prove to be thermally stable in steel (up to 20 temperature changes)

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Investigation of Kermets Based on ZrO_2 -Cr

and brass (more than 20 temperature changes) melts at 1650 or 1020°, respectively. 5) Kermets from ZrO_2 -Cr is not wetted by the molten metal. Its solubility in the metal depends upon its composition: at a chromium content of more than 50% the solubility is considerably increased. 6) Compositions Kh-40 (60% ZrO_2) and Kh-50 (50% ZrO_2) displayed the best mechanical strength and the highest thermal stability; they may be recommended for industrial use. 7) Metallic chromium is evaporated on its burning in vacuum. For this reason the burning in vacuum must be carried out without any time of stay or under protective gas. There are 5 figures, 5 tables, and 1 reference.

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lensovet, Kafedra tekhnologii keramiki (Leningrad Technological Institute imeni Lensovet, Chair of the Technology of Ceramics)

SUBMITTED: November 4, 1957

Card 3/3

18.6100

66003
SOV/81-59-8-28191

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 8, p 374 (USSR)

AUTHORS: Kaohalova, L.P., Avgustinik, A.I.

TITLE: An Investigation of a Ceramic Metal Based on ZrO_2-Ti

PERIODICAL: Tr. Leningr. tekhnol. in-ta im. Lenseveta, 1958, Nr 46, pp 94 - 102

ABSTRACT: Some properties of ceramic metals based on ZrO_2-Ti have been studied with the aim of manufacturing from them endpieces for thermocouples applicable to the measuring of temperatures of molten metals. Samples of various compositions with a Ti content of 2 - 20% were prepared from masses with a humidity of 6% by the method of dry pressing at a specific pressure of 1,000 kg/cm². The burning of the samples up to a temperature of 1,700°C was carried out in the electrovacuum furnace with a tungsten heater. It has been established that insignificant additions of titanium metal make it possible to obtain samples with a high mechanical resistance (a Ti addition in the amount of 4% and more makes it possible to obtain a ceramic metal with a bending resistance of up to 2,500 kg/cm²). It has been established by roentgenographic investigation that the partial formation of solid solutions of TiO in ZrO_2 of cubic structure does not prevent the

Card 1/2

66003

SOV/81-59-8-28191

An Investigation of a Ceramic Metal Based on ZrO_2 -Ti

reversible inversion of ZrO_2 taking place in the ceramic metal within the range of 1,100 - 1,200°C. As a result of the longlasting thermal treatment the disintegration of the cubic structure was detected. The prevention of the inversion disintegration of products made of ZrO_2 in the presence of Ti differs from the commonly adopted stabilization of ZrO_2 by additions of CaO, MgO. It consists in the compensation of volume changes, accompanying the inversion of ZrO_2 during heating, by volume changes of the metal. It is noted that in view of the weak resistance against oxidation, the use of the ceramic metal as material for the endpieces of thermocouples is possible only in the case of short-time temperature measurements in a brass melt.

G. Maslennikova

Card 2/2

KACHALOVA, Z.P., kand. sel'khoz. nauk; KHARITONOV, D.M. Prinsipal'i
uchastnye: MAMAYEV, K.A., agronom; NIKIFOROV, A.M., agronom;
CHELYSHKIN, Yu.G., red.; DEYEVA, V.M., tekhn. red.

[Controlling pests and diseases of field crops] Bor'ba s vreditel'nykh i boleznykh polevykh kul'tur. Moskva, Sel'khoz-izdat, 1963. 207 p. (MIRA 16:5)
(Field crops—Diseases and pests)

KACHALOVA, O.

Materials on freshwater oligochaetes in the Latvian S.S.R.
Izv. AN Latv. SSR no.5:85-90 '63. (MIRA 17:1)

1. Institut biologii AN Latviyskoy SSR.

KACHALOVA, O. L.

Food basis of benthos-feeding fishes in the Rezna, Usma, Siver, and Dreidza
Lakes. p. 147.

BIOLOGICHESKAIA NAUKA; SELSKOMU I LESNOMU KHOZJAISTVU. (Latvijas PSR
Zinatnu akademijs. Biologijas zinatnu nodala) Riga, Latvia, No. 3, 1957.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncle.

USSR/General and Specialized Zoology - Insects.

P.

Abs Jour : Ref Zhur - Biol., No 9, 1958, 40015

Author : Kachalova, O.L.

*Inst : -

Title : Larvae of the Caddis Flies *Rhyacophila obliterata* McL.
(Trichoptera, ~~Rhyacophilidae~~).

Orig Pub : Entomol. obozreniye, 1957, 36, No 1, 175-178.

Abstract : The mode of life of *R. obliterata* in Latvia, and some
details of the morphology of the larvae of this species,
were discussed.

* INSTITUT BIOLOGII AKADEMII NAUK LATSSR, RIGA.

Card 1/1

- 17 -

KACHALOVA, O. L.

GENERAL

PERIODICALS: VESTIS No. 2, 1958

KACHALOVA, O. Importance of caddis flies in food of fish. In Russian, p. 83

Monthly list of East European Accessions (EEAT) IC, Vol. 8, No. 2
February 1959, Unclass.

KACHALOVA, O.L., Cand Bio Sci--(diag) "Caddisflies in the composition
of ^{bottom} fauna of the lakes and flowing waters of the USSR." Riga, 1958. 12p
(Min of Higher Education USSR. Latvian State U in P. Strckha), 200 copies
(II, 31-58, 101)

- 3/-

KACHALOVA, O.^{L.}(Riga)

Nutrition of some water insects' larvae, a fish food object.
Vestis Latv ak no.6:147-152 '60.

(EEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut biologii.

(Fishes) (Larvae) (Insects)

KACHALOVA, O.I.

Occurrence of a peculiar larva of the mayfly *Prosopistoma*
foliaceum Fourc. (Ephemeroptera, Prosopistomatidae) in the
Western Dvina River in Latvia. Ent. oboz. 44 no. 4:827-831
'65 (MIRA 19:1)

1. Institut biologii AN Latvyskoy SSR, Riga.

Latvian S.S.R.

KACALOVA, Olga; LAGANOVSKA, Ruta; SKLENNIKS, C., red.; BITARS, A.,
tekhn. red.

[Food supply for fish in the lakes of the Latvian S.S.R.]
Zivju baribas baze Latvijas PSR ezeros. Riga, Latvijas PSR
Zinatnu akademijas izdevnieciba, 1961. 103 p. (MIRA 15:3)
(Latvia—Fishes—Food)

KACHALOVA, O.L.; SLOKA, N.A.

Dreissena polymorpha Pallas in the Daugava River basin. Trudy
Inst. biol. vnutr. vod no.7:47-54 '64.

(MIRA 18:2)

1. Institut biologii Latviyskoy SSR i Latviyskiy gosudarstvennyy
universitet.

LABUTIN, A.L.; KALINICHEVA, N.A.; KACHALOVA, R.V.; TRENKE, K.M.

New organic solvents and their possible application to the
lacquer and paint manufacture. Lakokras. mat. 1 ikh prim.
no.3:25-26 '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo
kauchuka imeni S.V. Lebedeva.

(Solvents)
(Paint industry)

KACHALOVA, Ye. K. KON', Ya. S. and ROZENFEL'D, L. H.

"Air Foam as a Larvacide", *Med. Paraz. i Paraz. Bolez.*, Vol. 17, No. 2, pp 184-87
1948.

L. KACHALOVA, Ye. K.

KON', Ya.S.; KACHALOVA, Ye.K.

NEK (0-17) insecticidal smoke pots in controlling bloodsucking insects. Med.paraz.i paraz.bol.supplement to no.1:53 '57.

(MIRA 11:1)

1. Iz Tsentral'noy nauchno-issledovatel'skoy laboratorii gigiyeny i epidemiologii Ministerstva putey soobshcheniya SSSR.

(BENZENE HEXACHLORIDE)

(INSECTS, INJURIOUS AND BENEFICIAL)

KACHALOVA, Z. P.

USSR/Agriculture -Seeds

Card 1/1

Author : Dunin, M. S., Prof. and Kachalova, Z. P., Cand. in Agri. Sci.

Title : Moist heating of seeds

Periodical : Nauka i Zhizn' 21/4 19-20, April 1954

Abstract : Experiments conducted at the K. A. Timiryazev Agricultural Academy in Moscow on plants revealed that by moist heating of the seeds their resistance to diseases could be increased and a larger crop would be produced. This is due to the fact that plants are susceptible to diseases at two periods, at the beginning of their life and near the end. Details of how wheat grains are infected by spores are given. At one farm oats were sown in 1952 after the seed had been subjected to moist heating. Then, in 1953, grain from this crop was sown without moist heating, but it still yielded 3.1 hundredweight per hectare above the average. Illustrations.

Institutions:

Submitted :

KACHALOVA, Z.P.

COUNTRY :USSR
 CATEGORY :Plant Diseases. Diseases of Cultivated Plants
 ABS. JOUR. : RZhBiol., No. 21 1958, No. 96253
 AUTHOR :Kachalova, Z.P.
 INST. :Timiryazev Agricultural Academy
 TITLE :Certain features of the growth of wheat under conditions of an infectious background of *Tilletia tritica* ant.
 ORIG. PUB. :Izv. Timiryazevsk. S.-Kh. Akad., 1957, No. 6, 19-42
 ABSTRACT :Upon introducing the chlamydospores of *T. tritica* into sand before planting wheat, it turned out that a dose of 0.5-1% heightened the energy of growth, and sometimes germination as well; there was an increase in size and an acceleration of the development of the wheat plants. Increasing the dose to 1.5-2.0 reduced the energy of germination, and a dose of 2.5-3.0% of the weight of the sand caused varying degrees of loss of germinating ability of the seed. With high doses
 CARD: 1/2

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KACHALOVA, Z.P., kand. nauk.

Effect of the presowing treatment of winter wheat on susceptibility
to covered smut. Dokl. TSKhA no.27:120-128 '57. (MIRA-11:4)
(Wheat--Diseases and pests) (Smuts)

KACHALOVA, Z.P., kand.sel'skokhozyaystvennykh nauk

Professor Mikhail Semenovich Dunin. Izv. TSKhA no.4:201-203 '61.
(MIRA 14:9)

(Dunin, Mikhail Semenovich, 1901-)

GORLENKO, M.V.; DEMENT'YEVA, M.F.; KACHALOVA, Z.P.

{Mikhail Semenovich Dunin. Moskva, 1961. 67 p.
(MIRA 15:8)

1. Moscow, Moskovskaya sel'skokhozyaystvennaya akademiya
im. K.A.Timiryazeva.

(Bibliography—Dunin, Mikhail Semenovich, 1901-)

KACHALOVA, Z.P., kand.sel'skokhozyaystvennykh nauk

Some results of using the anti-incitant serum at the
Experimental Station of Plant Protection. Izv. TSKHA
no.3:214-220 '62. (MIRA 15:9)

1. Direktor Opytnoy stantsii zashchity rasteniy Moskovskoy
ordena Lenina sel'skokhozyaystvennoy akademii im. Timiryazeva.
(Virus diseases of plants)
(Serum diagnosis)

PA 11/49T12

KACHAN, A. A.

USSR/Chemistry - Spectra, Absorption
Chemistry - Iron, Ferric

Jul 48

"Nature of the Ultraviolet Bands Absorbing Tri-
valent Iron Ions," B. Ya. Dain, A. A. Kachan, Inst
Phys Chem imeni L. V. Pisarshevskiy, Acad Sci USSR,
32 pp

"Dok Ak Nauk SSSR" Vol. LXI, No 3

Reports experiments. Results confirm view that
spectrum band of Fe^{3+} ions is an "electron trans-
fer spectrum." Submitted 24 Apr 48.

11/49T12

3

KACHAN, N-A. (17, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

PROCESSES AND PROPERTIES INDEX

Heterogeneous phenomena in the reduction of quadrivalent cerium ions B. Ya. Dain and A. A. Kachan. *Doklady Akad. Nauk S.S.S.R.* 67, 85-8 (1948). Photochem. reduction of $\text{Ce}(\text{CH}_3)_2$ in 2 M aqueous HClO_4 , measured by the amt. of O_2 evolved, on exposure to ultraviolet of 310 m μ , shows a marked aftereffect, with evolution of O_2 continuing, at a slower rate, after removal of the light source, and after repeated freezing and evacuation of the soln. No evolution of O_2 was ever observed in the dark unless the photochem. reaction has taken place beforehand. The heterogeneous nature of the reaction was demonstrated by expts. in packed and in nonpacked quartz vessels. The yield of O_2 is higher in the 1st case; the ratio r of the yields in the 2 cases decreases with increasing concn.; thus, in 60 min., with $\text{Ce}(\text{CH}_3)_2$, 0.02, 0.1, and 0.2 M, $r = 14.8, 9.0, \text{ and } 5.0$, resp. This proves that the reaction takes place predominantly at the walls of the reaction vessel, at higher concns., light is absorbed more predominantly in the vicinity of the walls, hence addition in creases of the surface through packing has less effect. At lower concns., light is absorbed also in the bulk of the soln., but the reaction will take place only if heterogeneous surface is provided also in the bulk; hence the more marked effect of packing at lower concns. Without light, quartz has no catalytic effect. In packed vessels, the aftereffect is absent. The quantum efficiency is low; thus, in a 0.26 M soln., in 313 m μ , it is 0.6. That heterogeneous surface effects are not involved in the activation step follows from the small temp. coeff.; e.g., in a 0.03 M soln., at 0, 20, 30, 40, and 60°, the amts. of O_2 evolved in 60 min. were 318, 317, 320, 320, and 407 cu. mm. In analogy to the photochem. reduction of Fe^{3+} (25m, *Proc. Acad. Nauk S.S.S.R.*, No. 12, 513 (1948), C.A. 42, 866a), the activation step is formulated as a shift of the electron cloud in the hydrated complex, $\text{Ce}^{4+}(\text{H}_2\text{O})_8 \rightarrow \text{Ce}^{3+}(\text{H}_2\text{O})_8$, followed by $\rightarrow \text{Ce}^{3+} + \text{H}^+ + \text{OH}^-$ and $2 \text{OH}^- \rightarrow \text{H}_2\text{O} + \text{O}$, with the latter reactions being heterogeneously catalyzed at the quartz surface. This mechanism does not, however, explain the aftereffect. N. Thon

ADDITIONAL METALLURGICAL LITERATURE CLASSIFICATION

INDEXING

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DATE

BY

REMARKS

C.A. KUCHAN, N.A.

Photochemistry of chlorophyll at liquid-air temperature.
 A. A. Kochan and N. Ya. Dain (L. V. Pleshevskii
 Phys. Chem. Inst., Acad. Sci. Ukr. S.S.R., Kiev). *Doklady
 Akad. Nauk S.S.S.R.* 90, 810-23 (1951).—On cooling from
 room to liquid-air temp., the absorption coeff. in the red
 absorption band of chlorophyll (a + b) in soln. in EtOH
 (0.046-0.078 g./l.) increases; prolonged irradiation with
 visible or with near-ultraviolet light (high-pressure Hg lamp)
 produces no further changes of absorption. Solns. of
 chlorophyll in a 1:3 mixt. of EtOH with Et₂O show the
 same increase of absorption in the red on cooling to liquid-
 air temp. In this mixed solvent, irradiation with near ultra-
 violet at liquid-air temp. produces a decrease of the absorp-
 tion in the red, which persists on standing in the dark at the
 liquid-air temp., but disappears on warming up to room
 temp. The change taking place on ultraviolet irradiation at
 liquid-air temp. is attributed to disocc. into a pos. chloro-
 phyll ion and an electron. If one assumes, with Terenin,
 that the pos. ion splits off a proton, the stability of the
 system at liquid-air temp. in the mixed EtOH + Et₂O
 solvent appears to be due to a fixation of the proton by
 Et₂O, in the form of the oxonium ion Et₃O⁺. This process
 does not take place in soln. in EtOH alone. Visible-light
 quanta are insufficient to produce ionization, and can give
 rise only to unstable excited states which may interact
 with the solvent. N. Thom

KACHAN, A.A., kandidat khimicheskikh nauk

New sensitive indicator of ultraviolet radiation. Gig. i san. 22
no.1:69-70 Ja '57.. (MLRA 10:2)

1. Iz kafedry neorganicheskoy i analiticheskoy khimii Belotserkov-
skogo sel'skokhozyaystvennogo instituta.

(ULTRAVIOLET RAYS, determination
ultrasensitive photochem. method (Rus))

Kachan, A. A.

AUTHOR: Kachan, A. A.

73-3-7/24

TITLE: Spectrophotometric Investigation of the Interaction of Methylene Blue with Copper Chloride in Aqueous Solutions. (Spektrofotometricheskoye Issledovaniye Vzaimodeystviya Metilenovogo Golubogo s Khloristoy Med'yuv Vodnykh Rastvorakh)

PERIODICAL: Ukrainskiy Khimicheskiy Zhurnal, 1957, Vol. 23, No. 3, pp. 325-332 (USSR).

ABSTRACT: In the presence of a platinum or palladium lamina hydrogen reduces methylene blue to its leuco-base. The author observed that the reduction of methylene blue by monovalent copper ions in aqueous solutions leads to the formation of a colourless product which has different properties from those observed in the leuco-bases. The author gives the results of comparative spectrophotometric investigations of solutions of leucobase of methylene blue and of aqueous solutions of dyes which underwent reduction with copper chloride. Synthesized and commercial chemically pure Cl-salt of methylene blue (without zinc) were used after repeated recrystallisation. The Card 1/5 purity of the methylene blue was tested by paper

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Spectrophotometric Investigation of the Interaction of Methylene Blue with Copper Chloride in Aqueous Solutions.

chromatography, as well as by spectral analysis. Solutions of the leuco base of methylene blue was obtained by the reduction of the dye solution with hydrogen on metallic platinum. Commercial copper chloride (Xy) was used in the experiments. Admixtures of divalent copper were separated by repeated washing with a 5% solution of HCl. The concentration of the copper chloride solution was determined by titrating the same with potassium permanganate. Colour changes during titration were checked with a photoelectric spectrophotometer which was assembled on the lines of the YM - 2 monochromator. The spectral curves in the ultraviolet region were measured on a Cq - 4 spectrophotometer. Figure 1 shows the apparatus used for eliminating the influence of dissolved oxygen, the test tube containing a known quantity of methylene blue. Figure 2 shows the influence of the HCl content on optical density of the solution the latter containing equimolecular quantities of methylene blue and copper chloride, 2×10^{-5} mole/litre. The temperature was maintained at $20 \pm 1^\circ\text{C}$. The discoloration effect of methylene blue solution by monovalent copper ions can

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Spectrophotometric Investigation of the Interaction of Methylene Blue with Copper Chloride in Aqueous Solutions.

also be obtained if a metallic copper plate is immersed in the acidified dye solution. Figure 3 shows the relation between the quantities of reacted methylene blue and the composition of the solution in a system with constant dye concentration and concentration of copper chloride (6×10^{-3} mole/litre) and constant volume. The HCl content was 0.8 mole/litre, the temperature $21 \pm 1^\circ\text{C}$. Maxima on the curve appeared when the ratio of methylene blue and copper chloride was approximately 1:1. Figure 4 gives the results of measurements of the absorption spectra of aqueous acidified HCl solutions (up to 1 mole/litre) containing equal quantities 1.8×10^{-3} mole/litre of methylene blue, leuco base methylene blue, reduced CuCl_2 dye solution, of a solution of the latter after additional reduction with hydrogen on a platinum plate. 2×10^{-3} mole/litre CuCl_2 was in the solution during all experiments. Figure 5 gives the absorption curves up to exposure to ultra-violet light and after 30 sec. exposure (with a Hg-quartz lamp CB-III - 250 of a solution containing 10^{-4} mole/litre leucobase methylene blue at pH 2.56. The influence of changes in temperature

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Spectrophotometric Investigation of the Interaction of Methylene
Blue with Copper Chloride in Aqueous Solutions.

on the optical density (when $\lambda = 670 \text{ m}\mu$) on a 2.1×10^{-5} mole/litre solution of methylene blue with addition of 2.2×10^{-5} mole/litre CuCl , and 0.4 mole/litre HCl (I); 2.2×10^{-5} mole/litre CuCl and 0.8 mole/litre HCl (II); 4.5×10^{-5} mole/litre CuCl and 0.4 mole/litre HCl (III) and 0.4 mole/litre HCl (IV). A 40 - 50% regeneration of the dye is obtained on increasing the temperature when twice the amount of copper chloride to methylene blue is used for the preparation of the investigated solution. When the first 3 additives (I - III) are used complete regeneration occurs when the solution is exposed to the influence of oxygen. Table 1 gives temperature data obtained during heating and cooling of the investigated solutions in ampoules. The obtained data verified the formation of semi-quinone form of methylene blue during the interaction of ions of the dye and copper chloride. There are 6 figures, 1 table and 12 references, 4 of which are Slavic.

SUBMITTED: November, 10, 1956

Card 4/5

KACHAN, A. A.

AUTHORS: Kachan, A. A., Sherstoboyeva, M. A. 78-3-5-5/39

TITLE: The Influence of Inhomogeneities on the Dark and Photo-chemical Decomposition of the Permanganate-Ion (Vliyaniye geterogennosti na temnovoye i fotokhimicheskoye razlozheniye permanganat-ionov)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol 3, Nr 5, pp 1089-1094 (USSR)

ABSTRACT: Comparative investigations were conducted on the behaviour of aqueous potassium permanganate solutions under dark operating conditions, as well as under the influence of photons. The spectrophotometric investigations show that the instability of the MnO_4^- -ions is connected with the reduction processes, which depend on the hydrogen-ion concentration of the solutions. The decomposition of the MnO_4^- -ions in neutral solutions proceeds slowly; in acid ones, however, it proceeds faster, and fastest in alkaline solutions in darkness. By the influence of photons, it is destroyed very quickly.

Card 1/2 The presence of a solid surface, especially of a glass wall,

17(1)

AUTHORS:

Kachan, A. A., Sherstoboyeva, M. A.

SOV/20-124-3-61/67

TITLE:

Effect of Light on the Electroconductivity of Potato Leaves
(Deystviye sveta na elektroprovodnost' list'yev kartofelya)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 707-710 (USSR)

ABSTRACT:

The illumination of the filamentous alga Clodophora and of the unicellular alga Chlorella with an electric bulb reduced the electroconductivity of the system. It increased again with subsequent darkening (Ref 1). This fact mainly reflects the change in the ion concentration of the culture solution: during illumination, the algae absorb ions from the solution, after the switching-off of the light, part of the ions from the cells are returned into the solution. In view of several important conclusions arrived at by L. G. Yaglova (Ref 1), the authors considered it an interesting task to obtain direct test results on the nature of the change of the conductivity of the green plant parts both during illumination and immediately after the switching-off of the light. The electroconductivity was measured in an electrode cell (Fig 1). Newly picked potato and Echeveria leaves were washed in aqua destillata and dried. A 500 watt projector bulb served as a light source. The light was directed onto the cell by means of a large condenser. Infrared rays

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Effect of Light on the Electroconductivity of Potato Leaves SOV/20-124-3-61/67

were absorbed through a filter from a CuSO_4 solution. Figure 2 shows the changes in the specific conductivities in an old (1) and a young (2) potato leaf. During the first few seconds of illumination the electroconductivity of the leaf rises rapidly. Then it ceases to increase and remains constant. After the switching-off of light the conductivity decreases. The chlorophyll-free subsoil vegetables (beetroot and carrots) show no changes in conductivity. Typical ferment toxins (Ref 5) that are directly related with photosynthesis (hydroxylamine hydrochloride, o-phenanthroline, copper sulfate) suppress the change effect of the conductivity (Fig 3). Thus the considerable role played by ferments in the photosynthesis of the potato leaf can be demonstrated. Figure 4 presents the results of control tests with Echeveria leaves. It can be considered a proven fact that light, during the first few seconds after its action, is the chief factor responsible for the rise in the electroconductivity of the potato leaves. L. G. Yaglova (Ref 1), however, could not notice this fact in her experiments. Further studies of the effect of light on the leaves of various plants may be of importance, not only for theory but also for practical application. There are 4 figures and 5 references, 2 of which are Soviet.

Card 2/3

Effect of Light on the Electroconductivity of Potato Leaves SOV/20-124-3-61/67

ASSOCIATION: Belotserkovskiy sel'skokhozyaystvennyy institut
(Belaya Tserkov' Agricultural Institute)

PRESENTED: September 24, 1958, by A. L. Kursanov, Academician

SUBMITTED: May 8, 1958

Card 3/3

KACHAN, A.A.; MAKHOVKA, P.P.

Photochemical reduction of ceric sulfate in aqueous solutions
of sulfuric acid. Zhur. fiz. khim. 36 no.3:526-532 Mr '62.
(MIRA 17:8)

1. Belotserkovskiy sel'skokhozyaystvennyy institut.

KORNEV, K.A. [Korniev, K.A.], doktor khim. nauk; KACHAN, A.A., kand.
khim. nauk; LOKHMACHOV, V.F.; VOYTSEKHIVS'KIY, R.V.
[Voytsekhivs'kyi, R.V.], kand. khim. nauk

Using ultraviolet spectroscopy for the investigation of the
photodisintegration of polycaprolactam. Khim. prom. [Ukr.]
no.1:65-66 Ja-Mr'63 (MIRA 17:7)

1. Institut khimii polimerov i monomerov AN UkrSSR. 2. Chlen-
korrespondent AN UkrSSR (for Kornev).

S/073/63/029/001/008/009
A057/A126

AUTHORS: Kul'skiy, L.A., Kachan, A.A., Sherstoboyeva, M.A., Timoshenko, T.K.

TITLE: The catalytic activity of silver water upon the oxidation of indigo-carmin by hydrogen peroxide

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 29, no. 1, 1963, 106 - 108

TEXT: The peroxidase activity of silver water (Agw) which is known as a strong bactericide was investigated at the Institut obshchey i neorganicheskoy khimii AN USSR, Belotserkovskiy institut (Institute of General and Inorganic Chemistry AS UkrSSR, Belotserkov Institute) using as a model the reaction between H_2O_2 and indigocarmin (IC). The peroxidase activity of Agw was compared with the activity of silver ions, and solutions containing dispersed silver, Ag_2O and $AgCl$. The effect of casein was also studied. The experiments were carried out with $5 \cdot 10^{-4}$ M IC solutions at pH ~ 5.9 , and the reaction was controlled by measuring the optical density (605 m μ) of the solution. It was observed, in agreement with literature data, that the reaction of IC decolorization with H_2O_2 occurs by the first order in relation to IC. The obtained values of the reaction

Card 1/2

GHYP, N.P. [Hnyy, N.P.]; KULIK, N.V. [Kulyk, N.V.]; KACHAN, A.A. [Kend.
khim. nauk; CHERVYATSOVA, L.L. [Cherv'iatsova, L.L.]

Lightproofing of polyamides by means of graft copolymerization.
Khim. prom. no.4:9-10 O-D '64. (MERA 18:3)

L 25772-65

ACCESSION NP: AT5002666

ACCESSION NR: AP4010061

S/0021/64/000/001/0082/0084

A A
AUTHOR: Gut'yrya, V. S. (Academician); Kachan, O. O.; Kolbanovs'ky'y, Yu. A.;
Polak, L. S.; Nizel's'ky'y, Yu. M.; Frolova, V. S.

TITLE: Radiolysis of cyclohexane adsorbed by synthetic zeolites

SOURCE: AN UkrRSR. Dopovid, no. 1, 1964, 82-84

TOPIC TAGS: radiation chemistry, radiolysis cation-exchanger, molecular sieve,
zeolite, synthetic zeolite, type X molecular sieve

ABSTRACT: The present work was done to determine the influence of the chemical composition of the adsorbents on the composition of the radiolytic products of cyclohexane. Synthetic zeolites (commercial CoX, NaX, NaCaX and NaNiX) were used to adsorb cyclohexane, which was irradiated with Co⁶⁰ gamma-radiation. The radiolytic products were analyzed by gas chromatography. The results indicate that the presence of two cations in the zeolite, one of them of variable valence, is important for the formation of an adsorbent actively affecting radiolysis. Orig. art. has 2 figures and 1 table.

Card 1/2

ACCESSION NR: AP4010061

ASSOCIATION: Insty*tut khimiyl polimeriv i monomeriv AN UkrRSR (Institute of the Chemistry of Polymers and Monomers, AN UkrRSR); Insty*tut naftokhimichnogo sy*ntezu AN SRSR (Institute of Petrochemical Synthesis, AN SRSR [Ukrainian equivalent of SSSR])

SUBMITTED: 20Jun63

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: CH, NS

NO REF SOV: 001

OTHER: 003

Card 2/2

ACCESSION NR: AP4012591

S/0021/64/000/002/0224/0226

AUTHOR: Kornyshev, K. A. (Corresponding member); Gny*p, N. P.; Kachan, ^A~~S~~. ^A~~S~~.; Chervyatsova, L. L.

TITLE: Photochemical initiation of graft copolymerization of acrylonitrile to kapron fiber

SOURCE: AN UkrRSR. Dopovidy, no. 2, 1964, 224-226

TOPIC TAGS: kapron, acrylonitrile, nylon, graft copolymer, polyamide fiber copolymer, polycaprolactain

ABSTRACT: Photochemically initiated graft copolymerization was carried out with acrylonitrile in the vapor phase to avoid formation of the homopolymer. The fiber was irradiated with unfiltered light of a mercury-quartz lamp at a distance of 20 cm for 1 hour at 20°C. It was found that the grafting continued after the irradiation was discontinued. A kinetic equation derived for the graft copolymerization was used to calculate the activation energies of the process and of the growth and breaking of the chains. Orig. art. has 1 formula and 1 figure.

Card 1/2

ACCESSION NR: AP4012591

ASSOCIATION: Insty*tut khimiyl polimeriv i monomeriv AN UkrRSR (Institute of the Chemistry of Polymers and Monomers, AN UkrRSR)

SUBMITTED: 21Jun63

DATE ACQ: 03Mar64

ENCL: 00

SUB CODE: CH

NO REF SOV: 002

OTHER: 014

Curd 2/2

ACCESSION NR: AP5002750

S/0075/01/03/12/1964 60

AUTHOR: Korney, K. A.; Kachan, A. A.; Chervyatsova, L. I.; Polak, I. S.

TITLE: KINETICS OF THE OXIDATION OF ETHYLENE GLYCOL BY

15 SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 30, no. 12, 1964, 1319-1321 19

TITLE: KINETICS OF THE OXIDATION OF ETHYLENE GLYCOL BY

oxidation of ethylene glycol by potassium dichromate in sulfuric acid
Initiation: ethyl 12 Å and the average lengths of chains of the
Cord 1/2

L 25238-65

ACCESSION NR: AP5002750

vapor pressure led to an increase in the quantity of copolymerized polyacrylonitrile. An increase in temperature decreased the amount of copolymerization while an increase in radiation dose above 2 Mrad had little effect. The authors are indebted to A. Ia. Bozhovskiy for participating in the evaluation of the results. Orig. art. has 4 figures and 1 formula

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (High polymer institute, AN SSSR)

SUBMITTED: 25Dec63

ENCL: 00

SUB CODE: OC

NO REF SOV: 003

OTHER: 005

Cord 2/2

L 23064-65 RMG(1)/BWT(m)/EPP(c)/EPP(r)-2/EAP(1)/A.A.A.-1/2

ACCORD NO. AP0004249

S/0021/65/100

AUTHOR: Kostyl'ova, Z. O. (Kostyleva, Z. A.); Korniyev, K. A. (Kornev, K. A.)
 (Corresponding Member UkrSSR); Yachan, O. O. (Yachan, A. A.)
Pazenko, Z. N.

TITLE: The radiation chemical linking of polystyrene by linking agents

SOURCE: AN UkrRSR. Dopovid, no. 1, 1965, 64-66

TOPIC TAGS: triallyl isocyanurate, irradiation in air, elastic state cross linking

ABSTRACT: The efficacy of using triallyl isocyanurate (TAIC) in radiational chemical cross linking of polystyrene was established. It is shown that polystyrene is practically completely linked on adding 20 p.c. TAIC and irradiating in air with a dose of 50 megarads. The cross-linked polymer retains a stable elastic state up to a temperature of 300°C. Orig. art. has table.

ASSOCIATION: Instytut Khimiy vysokomolekulyarnykh spolk (Institute of Chemistry of High Molecular Compounds)

Card 1/2

2 2200-45

1973 11 17

SUBMITTED: 204404

ENCL: 00

NO REP SOV: 005

OTHER: 002

Card 2/2

KORNEV, K.A., glav. red.; SHEVLYAKOV, A.S., red.; CHERVYATSOVA, L.L., red.; SMETANKINA, N.P., red.; YEGOROV, Yu.P., red.; ROMANKEVICH, M.Ya., red.; KUZNETSOVA, V.P., red.; PAZENKO, Z.N., red.; KACHAN, A.A., red.; VOYTSEKHOVSKIY, R.V., red.; GREKOV, A.P., red.; DUMANSKIY, I.A., red.; AVDAKOVA, I.L., red.; VYSOTSKIY, Z.Z., red.; GUMENYUK, V.S., red.; MEL'NIK, A.F., red.

[Synthesis and physical chemistry of polymers; articles on the results of scientific research] Sintez i fiziko-khimiia polimerov; sbornik statei po rezul'tatam nauchno-issledovatel'skikh rabot. Kiev, Naukova dumka, 1964. 171 p. (MIRA 17:11)

1. Akademiya nauk URSR, Kiev. Institut khimii vysokomolekulyarnykh soyedineniy. 2. Institut fizicheskoy khimii im. L.V. Pisarzhevskogo AN USSR (for Vysotskiy). 3. Institut khimii vysokomolekulyarnykh soyedineniy AN USSR (for Romankevich, Chervyatsova, Voytsekhovskiy).

APPROVED: _____
DATE: _____

[illegible]

АТТЕСТАТ выдан А. А. Петрову, Е. А. Петрову

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skikh rabot (synthesis and research work), Kiev, Naukova dumka, 1960, 117-121

T-23 TACS: acrylonitrile copolymer, caprone fiber, vapor phase polymerization

... .. with established ...

Card 1.

Card 2/2

L 16011-66 EWP(j)/EWT(m)/T/EWP(v) RM/WW/GS
 ACC NR: AT6006235 (A) SOURCE CODE: UR/0000/65/000/000/0005/0008
 AUTHOR: Gnyp, N. P.; Kachan, A. A.; Kulik, N. V.; Chervyatsova, L. L. 43
 40
 ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR, Kiev (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR) Bt1
 TITLE: Nonadditivity of properties of the constituents of a graft polymer
 SOURCE: AN UkrSSR. Modifikatsiya svoystv polimerov i polimernykh materialov (Modification of the properties of polymers and polymeric materials). Kiev, Naukova dumka, 1965, 5-8
 TOPIC TAGS: synthetic fiber, graft copolymer, polyacrylonitrile, polyvinyl acetate adhesion, caprone
 ABSTRACT: The effect of a grafted layer on the properties of modified caprone fiber was investigated. The properties of graft copolymers were studied by determining the dyeability and adhesiveness of the fibers. Experiments with an acid dye (acid blue) and a basic dye (fuchsin) showed that caprone fiber containing 6% of grafted polyacrylonitrile increases the sorption of acid blue by a factor of 1.5, and that 44/55 16

Card 1/2 2